

What is claimed is:

Sub 1

1. A truss structure comprising an upper chord member, a lower chord member and a diagonal chord member connected to a parent plate via a connection part formed on the end of each of said chord members, wherein

said upper chord member, said lower chord member and said diagonal chord member comprise a pipe member;

said connection part comprises a tubular section, and a flat section formed integral and continuously with said tubular section which are formed of said pipe member having a same diameter by a constrained pattern shaping press; and

said connection part is connected to said parent plate via a bolt opening formed in said flat section.

2. A truss structure comprising an upper chord member, a lower chord member and a diagonal chord member connected to a parent plate via a connection part formed on (the end) of each of said chord members, wherein

said upper chord member, said lower chord member and said diagonal chord member comprise a pipe member;

said connection part comprises a pipe tubular section which is formed of said pipe member having a same diameter by a cylindrical drawing, and a flat section formed integral with said pipe tubular section by a flat press; and

said connection part is connected to said parent plate via a bolt opening formed in said flat section.

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Claim 1

3. A truss structure according to ~~claims 1 or 2~~,
 wherein said connection part further comprises said parent
 plate and a rib erected crosswise thereon, and wherein an edge
 of said flat section is tapered to allow for each flat section
 of each chord member to be positioned in close proximity.

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4. A truss structure comprising an upper chord member,
 a lower chord member and a diagonal chord member connected to
 a parent plate via a connection part formed on (the end) of each
 of said chord members, wherein

said upper chord member, said lower chord member and said
 diagonal chord member comprise a pipe member;

said connection part includes a flat section which is
 formed by a compression press, an edge of said flat section being
 tapered, and wherein when assuming that a half length of a
 distance between two oppositely positioned chord members, i.e.,
 a distance between two connection centers of respective flat
 sections, is "l", and that a diameter of a bolt provided on the
 flat sections is "d", there holds a relationship between "l"
 and "d" that

$$l \leq \sqrt{2t/2 + 10\sqrt{2 + 2.0d + B/2}}, \text{ and}$$

$$l > 3d \text{ (mm).}$$

5. A truss structural member for use in a truss
 construction including such as an upper chord member, a lower

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chord member and a diagonal chord member, each having a connection part formed on the end thereof, wherein said connection part comprises:

5 a tubular section which is formed by a cylindrical constrained shaping of a pipe, and

a flat section which is formed integral with said tubular section by a flat compression press, and wherein a bolt opening is formed in said flat section.

10 6. A die for forming a connection part on the end of a pipe member for use in a truss construction as its structural member including an upper chord, a lower chord and a diagonal chord members, comprising:

15 an upper die and a lower die, each of which having a tubular curved semi-surface open to the outside and counterposed to each other, both of which in combination providing a restriction groove for forming a constrained pattern.

20 7. A method of forming a truss structural member such as an upper chord, a lower chord and a diagonal chord members to be used in a truss construction, each member having a connection part formed on the end thereof, using a die having an upper die and a lower die, each die having a tubular curved semi-surface which is open to the outside and is positioned
25 opposite to each other, which in combination provides for a restriction groove to form a constrained pattern, comprising

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the steps of:

mounting a pipe in said die;

forming a tubular section by constrained compression; and

forming a flat section simultaneously integral and in

5 close proximity with said tubular section.

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